EX PARTE OR LATE FILED

**Gina Harrison**
Director
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Group-Washington

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MAY 18 1995

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

May 18, 1995

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**EX PARTE**

William F. Caton
Acting Secretary
Federal Communications Commission
Mail Stop 1170
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Dear Mr. Caton:

Re: RM 8643 - Petition for Rulemaking of Pacific Bell Mobile Services Regarding a Plan for Sharing the Costs of Microwave Relocation

Yesterday, Betsy Granger, Attorney, and Steve Aspell, of Pacific Bell Mobile Services and I met with Gregory Rosston, Evan Kwerel and John Williams of the Office of Plans and Policy; Laurence Atlas, Associate Bureau Chief, Wireless Telecommunications Bureau; Suzanne Tetreault, Associate General Counsel and Peter Tenhula of the Office of General Counsel; Lisa Smith, Legal Advisor to Commissioner Barrett; Jill Luckett, Special Advisor to Commissioner Chong; and David Siddall, Legal Advisor to Commissioner Ness, to discuss issues summarized in the attached outlines. Today, Betsy Granger, Attorney, and Steve Aspell, of Pacific Bell Mobile Services and I met with Rudolfo Baca, Legal Advisor to Commissioner Quello, to discuss issues summarized in the attached outlines. Please associate these materials with the above-referenced proceeding.

We are submitting two copies of this notice in accordance with Section 1.1206(a)(1) of the Commission's Rules.

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Please stamp and return the provided copy to confirm your receipt. Please contact me should you have any questions or require additional information concerning this matter.

Sincerely,

Gina Harrison
Director

Attachments - 3

cc: Laurence Atlas
Rudolfo Baca
Evan Kwerel
Jill Luckett
Gregory Rosston
David Siddall
Lisa Smith
Peter Tenhula
Suzanne Tetreault
John Williams

# MICROWAVE RELOCATION COST SHARING PLAN

## Pacific Bell Mobile Services

# FREE RIDER ISSUE

- OCCURS BECAUSE SEVERAL PCS PROVIDERS MAY CAUSE HARMFUL INTERFERENCE WITH THE SAME LINK

# STEPS FOR REIMBURSEMENT

- PCS RELOCATOR ACQUIRES INTERFERENCE RIGHTS
- REQUIRED FREQUENCY ANALYSIS WILL REVEAL IF THERE IS A NEED FOR REIMBURSEMENT

# FORMULA

- SHARE OF COST DETERMINED BY FOLLOWING FORMULA OR A MUTUALLY AGREED TO LESSER AMOUNT

$$R_N = \frac{C}{N} \times \frac{120 - (T_N - T_1)}{120}$$

- C EQUALS THE AMOUNT PAID TO RELOCATE THE LINK.
- N EQUALS THE NUMBER OF THE INTERFERING PCS PROVIDER.
- $T_N$ EQUALS THE NUMBER OF THE MONTH IN WHICH PCS PROVIDER N WOULD HAVE CAUSED INTERFERENCE WITH THE LINK.
- $T_1$ EQUALS THE MONTH THAT THE FIRST PCS PROVIDER OBTAINED THE INTERFERENCE RIGHTS AS EVIDENCED BY THE INTERFERENCE RIGHTS BEING RECORDED IN THE FCC DATABASE.

# OTHER ASPECTS OF THE PLAN

- RECORDS OF MICROWAVE RELOCATION COST MAINTAINED BY CLEARINGHOUSE
- DESIGNATED ENTITIES ENTITLED TO PAY THEIR SHARE IN INSTALLMENT PAYMENTS
- CAP OF $600,000 PLACED ON THE COST OF A LINK

# ADVANTAGES

- AVOIDS AREAS OF DISPUTE
- DEPRECIATES RELOCATION COSTS SO THAT LATER ENTRANTS BEAR A SMALLER SHARE
- USES AN EXISTING STANDARD TO DETERMINE INTERFERENCE

- EQUITABLE - ONLY THOSE THAT BENEFIT FROM RELOCATION PAY
- BENEFITS DESIGNATED ENTITIES
- ENCOURAGES RELOCATION SINCE POTENTIAL FOR REIMBURSEMENT EXISTS

# CONCLUSION

- LACK OF A COST-SHARING MECHANISM ENCOURAGES A WAIT AND SEE ATTITUDE AND MAY DEFER DEPLOYMENT OF PCS
- FAILURE TO ACT QUICKLY WILL PENALIZE THOSE WHO INITIATE MICROWAVE RELOCATION EFFORTS AND WILL RAISE THE COST OF SERVICE FOR THOSE LICENSEES

- THE PUBLIC AND THE INDUSTRY WILL BENEFIT FROM A EQUITABLE COST SHARING PLAN PUT INTO EFFECT QUICKLY

# Need for Expedited Action

- Early PCS entrants will be penalized by FCC delay
- Quick action before 6/15/95 would aid DE's business planning and auction preparation
- Notice should be issued immediately to provide all interested parties that they could be subject to microwave relocation cost sharing.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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| Petition for Rulemaking | ) |
| of Pacific Bell Mobile Services | ) |
| Regarding a Plan for Sharing | ) |
| the Costs of Microwave Relocation | ) |
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# PETITION FOR RULEMAKING OF PACIFIC BELL MOBILE SERVICES

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May 5, 1995

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## SUMMARY

Although several PCS licensees may benefit from the relocation of a microwave link, currently there is no mechanism in place to share the cost among those who benefit. This creates two problems. One, some PCS providers may take a wait and see attitude, hoping someone else will absorb the cost to clear the link. If too many providers take this posture, deployment of PCS could be delayed. Two, PCS providers that take a proactive stance and quickly initiate relocation will be at a competitive disadvantage because their cost of service will be higher. This Petition for Rulemaking proposes an equitable cost sharing plan to eliminate these problems.

Our goal in developing the submitted plan was to create an equitable cost sharing plan that avoided controversial determinations such as direct cost vs. premium cost, degree of interference, and "benefit" of relocation. Instead of separating direct and premium costs, we propose to depreciate relocation costs so that later entrants bear a smaller cost. To avoid the degree of interference and degree of benefit determinations, our plan shares costs equally among those who interfere reduced only by depreciation to account for later entry.

The centerpiece of the plan is the creation of interference rights that are separate from microwave transmission rights. Our plan transfers the microwave licensee's right not to be interfered with to the PCS licensee that relocates the link. This would be reflected in the FCC database.

When PCS licensees discover as part of their required interference analysis that they would have interfered with the link , if the link were still in operation, they must reimburse the PCS provider that relocated the link according to the proposed formula described in detail in the Petition orpursuant to a mutually agreed amount.

Designated entities would be permitted to pay their share of relocation costs in installment payments along the lines of the auction rules.

This plan offers a straightforward mechanism to eliminate the free rider problem and to encourage the relocation of links, since the potential for reimbursement exists. We urge the Commission to initiate a rulemaking on our plan as soon as possible.

Before the
FEDERAL COMMUNICATIONS COMMISSION
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# PETITION FOR RULEMAKING OF PACIFIC BELL MOBILE SERVICES

## I. INTRODUCTION

Pursuant to Section 1.401 of the Commission's Rules, Pacific Bell Mobile Services ("PBMS") petitions for a rulemaking regarding the sharing of microwave relocation costs. The Commission has spent a great deal of time in defining its rules and policies for making spectrum available for emerging telecommunications technologies. The rules provide for the relocation of incumbent microwave users if licensees in emerging technologies such as broadband PCS are unable to share the spectrum without causing harmful interference to the incumbents.[1]

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[1] In the Matter of Redevelopment of Spectrum to Encourage Innovation in the Use of New Technologies, ET Docket No. 92-9, First Report and Order and Third Notice of Proposed Rulemaking, 7 FCC Rcd 6886 (1992); Second Report and Order, 8 FCC Rcd 6495; Third Report and Order and Memorandum Opinion and Order, 8 FCC Rcd 6589 (1993).

The Commission has downplayed the cost of microwave relocation. "It bears emphasis that relocation costs are expected to be a relatively small portion of PCS licensees total costs."[2] However, the Personal Communication Industry Association ("PCIA") estimates that the costs of microwave relocation to PCS licensees could exceed $1 billion.[3]

We share PCIA's view that the costs of microwave relocation will be substantial. In California, there are approximately 260 microwave links that we estimate we will interfere with as the service provider for the B block Major Trading Areas. See Appendix A. Currently, there is no mechanism in place to share the costs of microwave relocation among all those PCS licensees that benefit whenever a PCS licensee pays for the relocation of a microwave link. This creates a serious inequity, and we ask the Commission to address this inequity in a rulemaking.

## II. BACKGROUND

In its Third Memorandum Opinion and Order in GEN Docket No. 90-314, the Commission addressed a microwave cost sharing plan presented by PCIA. The Commission recognized that eliminating any "free rider" aspect of microwave relocation was an attractive idea in theory but concluded that PCIA's proposal was not sufficiently developed.[4] Moreover, the Commission was concerned that ambiguity in the PCIA proposal would "increase the

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[2] In the Matter of Amendment of the Commission' Rules to Establish New Personal Communications Services, 9 FCC Rcd 6908, para. 4 (1994) ("Third Memorandum Opinion and Order").

[3] Petition for Partial Reconsideration of Memorandum Opinion and Order, GEN Docket No. 90-314, 9 FCC Rcd 4957 (1994), Personal Communications Industry Association, July 25, 1994, p. 2.

[4] Third Memorandum Opinion and Order, para. 40.

likelihood that this Commission will be called upon to adjudicate complex disputes that are almost wholly of a commercial nature (e.g. whether a particular PCS licensee actually 'benefited' from a relocation, and to what extent; the amount of the 'direct' costs of that relocation, as opposed to 'premium' costs; and the appropriate basis for measuring each PCS licensee's 'pro-rata' share of such costs.)"[5] We have attempted to eliminate such ambiguities in the plan described in Section III.

The "free rider" problem arises because several PCS providers may cause harmful interference with the same microwave link. Several PCS providers may interfere with the same link, partly because of the difference in how microwave and PCS spectrum is allocated and licensed. For example, microwave links may cross Major Trading Areas ("MTA") and Basic Trading Area ("BTA") boundaries. In addition, the channelization is different so that a single microwave link may also cut across several PCS frequency blocks affecting all of the blocks it passes through.

Technical characteristics of the microwave links are also important. A microwave link located entirely in Block B may suffer interference from Block A, in which case the A, D and B Block licensees have an interest in relocating that link. Thus, several PCS providers may interfere with the same microwave link, and they may all benefit from relocating the link.

Without a cost-sharing plan the PCS provider that relocates the link pays the full cost while all other PCS providers that would also interfere with the link receive a free benefit. Consequently, some PCS providers may take a "wait and see" attitude, hoping someone else will

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[5] Id.

clear the link for them. If too many providers take this posture, deployment of PCS could be delayed.

PBMS considered a variety of different microwave relocation cost allocation plans before submitting the current version. These included plans based on the amount of interference contributed by each PCS licensee ($ per dB), plans that analyzed the population benefited by a particular relocation ($ per pop), plans based on channel mapping (cochannel cost sharing), and plans that required a central organization, such as a Licensed Transition and Management ("LTAM") to assume the responsibility of relocating all the existing microwave links in the US and assigning relocation cost to all PCS licensees. All the plans considered were possible but either lacked the simplicity and ease of administration of the current plan or else created too much potential for abuse and dispute.

The $ per dB plan would calculate the total interference received at a particular microwave receiver and distribute the cost by percentage of interference contributed. This approach has the feature that all beneficiaries contribute in proportion to the interference they cause. However, because total relocation costs do not depend on the total amount of interference, this is a dubious basis for cost allocation. Also, the administration of such a plan would be open to extensive dispute concerning the choice of simulation model and parameters.

The $ per pop plan also shared the appeal of the costs being distributed in proportion to the number of potential subscribers in a licensee's market which benefited from a particular microwave relocation. This related the costs more strongly to the benefits received from a microwave relocation, but would also be subject to simulation model and parameter disputes.

The channel mapping idea was based on how the existing operational fixed service microwave channel plan would be mapped into the PCS channel plan. For example, a microwave receiver operating at 1855 MHz would be mapped into the PCS A block and an 1870 MHz receiver would be mapped into both the D and B PCS blocks. Microwave links located completely within a particular PCS block would be the responsibility of the PCS licensee to relocate. If a PCS licensee relocated a link outside of his frequency block due to adjacent channel interference concerns, the entire cost of the relocation would be recovered from the PCS licensee operating within that particular block. This type of plan had the advantage of reducing the number of cost sharing participants involved in any particular microwave relocation, because the costs would only be shared among the cochannel PCS licensees. By artificially reducing the number of cost sharing participants to cochannel cases, the cost per any individual cochannel PCS licensee will rise, while allowing full cost recovery for adjacent channel relocations. This approach did not recognize that the benefits of a particular relocation can extend well beyond the channel plans.

This approach has additional problems as well. The first is that it encourages providers to undertake the relocation of links for which they will pass off 100% of the costs. Such an arrangement would provide inadequate incentives for cost control and would increase the likelihood of disputes about the equivalence of the services provided to the relocated link. Second, this scheme does not allocate costs between A and B block licensees when the link lies in a block, say block D, that never establishes service. Moreover, under the same circumstances, it might discourage the D block licensee from establishing service in order to avoid incurring the

link relocation cost. This could happen even though the link could be economically relocated or, indeed, has already been relocated.

The LTAM was based on the approach taken by the potential unlicensed PCS equipment providers in clearing the 1910-1930 MHz band for unlicensed PCS. A single non-profit organization would be chartered to assume the responsibility of relocating all the existing 1850-1990 MHz microwave links to make PCS possible without interference. The costs of moving the microwave links would be recovered by assessments on licensed transmitting devices. This approach would be difficult to start at this point in time because it is time-consuming to set up. It was 2 years from the time UTAM was proposed until a formal proposal for funding and clearance of the bands was submitted in August 1994.[6] The plan has not yet received formal approval by the Commission. The A and B block licenses will soon be authorized and microwave relocation is beginning. There is not sufficient time to use an LTAM approach.

Our goal in developing the submitted plan was to create an equitable cost sharing plan that avoided the controversial determinations required by the plans discussed above such as direct cost vs. premium costs, degree of interference, and 'benefit' of relocation that would force the Commission to be the arbiter of endless disputes. Professor Paul Milgrom assisted us in developing the plan.

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[6] Public Notice, Further Comments Sought on Plan for UTAM, Inc. Regarding Financing and Managing 2 GHz Microwave Relocation, DA 94-873, August 11, 1994.

Instead of separating direct and premium costs, we propose to depreciate the relocation costs so that later entrants bear a smaller cost. To avoid the "degree of interference" and "degree of benefit" determinations, our plan shares the costs equally among those who interfere reduced only by the depreciation to account for later entry. Attempts to calculate the degree of benefit or degree of interference are not only difficult, but also largely irrelevant. A licensee either interferes or he does not. If he interferes, he benefits from a previous relocation and should pay a share of the cost. This is equitable because if no other licensee had initiated relocation, the full cost would have fallen on the interfering licensee regardless of the degree of harmful interference.

## III. THE PBMS RELOCATION COST SHARING PLAN

The centerpiece of the plan is the creation of interference rights that are separate from the microwave transmission rights. Section 94.63 of the Commission's Rules states the interference criteria for private fixed microwave licensees and establishes an obligation not to interfere and a right not to be interfered with. Our plan transfers this right not to be interfered with to the PCS licensee that relocates the link and he would be listed in the FCC database as the owner of the interference rights to that link. In other words, although there is no longer any transmission over the link, the FCC database would indicate that a particular PCS provider who migrated the link has interference rights to that link on a primary basis, as if the link were still operational.

Pursuant to Section 24.237 of the Commission's Rules whenever another PCS provider begins the required prior coordination notice ("PCN") process, links that have

interference rights would require compensation if a subsequent PCS provider's system would have caused harmful interference if the link were still in operation. Interference would be determined by the criteria set forth in the TIA Telecommunications Systems, Bulletin 10-F, "Interference Criteria for Microwave Systems," May, 1994. This sets out a clear standard to determine if another PCS licensee benefits from a relocation paid for by another PCS licensee. If, as part of the PCN process, a PCS provider determines that he would have interfered with the link had it not already been relocated, he must reimburse the PCS licensees that paid for the relocation pursuant to the following formula.

$$R_N = \frac{C}{N} \times \frac{120 - (T_N - T_1)}{120}$$

C equals the amount paid to relocate the link.

N equals the number of the interfering PCS provider. After the link is relocated, the next PCS provider who would interfere would be 2, the next one 3 and so on.

$T_N$ equals the number of the month in which PCS provider N would have caused interference with the link, i.e., when his system is placed in operation.

$T_1$ equals the month that the first PCS provider obtained the interference rights as evidenced by the interference rights being recorded in the FCC database.

We propose that a clearinghouse maintain records on the amount paid to relocate a link. Appendix B lists what those records should include.

The following is an example of how the formula works. The PCS provider who relocates the link pays $60, so C = $60. His interference rights are registered in the FCC database in January, 1996 so $T_1 = 1$. The next PCS provider puts a link in service that would

have interfered with the relocated link in January, 1997, so $T_N = 13$. $N = 2$, since this is the second PCS provider.

$$R_2 = \frac{60}{2} \times \frac{120 - (13-1)}{120} = \$27$$

The second PCS provider pays $27 to the first. Notice that, after deducting its compensation, the first PCS provider finds that it has paid $33, or $6 more than the second provider. This $6 is the cost of the first year depreciation - a cost that is borne only by the first provider.

The next PCS provider puts in service a system that would have interfered with the relocated link beginning in January, 1998. That provider pays

$$R_2 = \frac{60}{3} \times \frac{120 - (25-1)}{120} = \$16$$

and divides the payment equally between the first two providers. After adjusting for $8 in new receipts, the net payment by the first provider is now $25; the net payment by the second provider is $19; and the net payment by the third provider is $16. The $6 difference between the first and second provider continues to reflect the first year depreciation charge. The $3 difference between the second and third providers reflects the fact that the second provider has borne half of the second year depreciation charge. If a fourth provider later begins service that would have interfered with the link, it would similarly pay less than the third provider by an amount equal to one-third of the depreciation charge for the period between the times that their services were established. Appendix C contains further examples.

Some microwave licensees have regional systems. Those licensees may arrange with a PCS provider to relocate their entire microwave system, even when the provider is not